What is claimed:

1. A nano-twin copper material with ultrahigh strength and high electrical conductivity was composed of roughly equiaxed submicron-sized grains, inside each grain, there are high density of growth-in twin lamellae with different orientations; and the twin lamellae with the same orientations are inter-parallel; The twin spacing ranges from several nanometers to 100 nm; and the lengths from 100-500 nm.
2. The nano-twin copper material with ultrahigh strength and high electrical conductivity according to the claim 1, characterized in that it has the following properties: density of 8.93±0.03 g/cm^3, purity of 99.997±0.02 at%, yield strength of 900±10 MPa and elongation of 13.5±0.5% at room temperature at tensile strain rate of 6×10^{-3}/s, electrical resistivity at room temperature (293 K) of $(1.75\pm0.02)\times10^{-8}$ Ω·m, the temperature coefficient of resistivity of 6.78×10^{-11} K^{-1}.
3. The nano-twin copper material with ultrahigh strength and high electrical conductivity according to the claim 1, characterized in that the said submicron grain sizes range from 300-1000 nm.
4. A method for producing a nano-twin copper material with ultrahigh strength and high electrical conductivity according to the claim 1, characterized in that the electrodeposition technique is used, electron purity grade $CuSO_4$ solution is selected as electrolyte with the addition of ion-exchanged water or distilled water, pH of the said electrolyte is 0.5-1.5, anode is 99.99% pure Cu sheet and cathode is iron sheet or low carbon steel sheet with surface plated by Ni-P amorphous layer;

   The said pulsed electrodeposition technique parameters comprise: pulse current density of 40~100 A/cm^2; on-time (t_{on}) of 0.01~0.05s and off-time (t_{off}) of 1~3s; the distance between anode and cathode of 50~100mm, the area ratio of anode and cathode of (30~50):1; electrolyte temperature of 15~30°C; electrolyte in electromagnetic stirring;

Additive is a combination of 0.02-0.2 mL/L gelatine aqueous solution with concentration of 5-25% and 0.2-1.0 mL/L high-purity NaCl aqueous solution with concentration of 5-25%.